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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. | |
|-----------------------|-------------|----------------------|---------------------|------------------|--|
| 10/626,565 | 07/25/2003 | Kei Hiruma | 116695 | 9343 | |
| 25944 | 7590 | 01/09/2006 | EXAMINER | | |
| OLIFF & BERRIDGE, PLC | | | | NGUYEN, HOAN C | |
| P.O. BOX 19928 | | | | ART UNIT | |
| ALEXANDRIA, VA 22320 | | | | 2871 | |
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DATE MAILED: 01/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-----------------------------------|-------------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/626,565 | HIRUMA ET AL. | |
| | Examiner HOAN C. NGUYEN | Art Unit 2871 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 07 December 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 6 and 7 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-5 and 8-11 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/07/2005 has been entered.

Non-elected claims 6-7 are withdrawn. Claims 1-5 and 8-11 are pending in the elected species.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 8-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Abe (US5511591A).

In regard to claim 8, Abe teaches (Fig. 10) a droplet discharge apparatus 10 which disposes a liquid material in a specified quantity on a substrate (col. 2 lines 35-38) comprising

- a nozzle (at a dispenser) for discharging the liquid material in droplets;
- a liquid material supply system which supplies the liquid material to the nozzle;
- a measuring device (controlling with step motor 31) which measures a quantity of the liquid material disposed on the substrate (col. 2 lines 35-38) discloses a liquid crystal dispenser able to release drop by drop ad able to control the quantity of one drop, which is performed controlling the number of drops, thus this dispenser must has the measuring device to control quantity of liquid crystals that drop on substrate);wherein a quantity or amount of the liquid crystal material disposed on the substrate is measured (col. 3 lines 29-33) by the measuring device (stepping motor 31) and the discharge of the liquid crystal from the nozzle is stopped when the quantity of the liquid crystal material disposed on the substrate reaches the specified quantity or amount (col. 3 lines 29-33).

Claim 9:

- a temperature control device which warms the liquid material to room temperature or higher (col. 5 line 62 to col. 6 line 2).

Claims 10-11:

- this droplet discharge apparatus 10 can manufacture the liquid crystal display (electronic apparatus) comprising a liquid crystal layer.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe (US5511591A) in view of Mondin et al. (EP 994180 A1)

In regard to claims 1 and 3, Abe teaches (Figs. 7-10) a droplet discharge method for disposing liquid material in a specified quantity on a substrate (col. 2 lines 35-38), the discharge device comprising a nozzle 10 for discharging the liquid material in droplets, and the droplet discharge method comprising the steps of:

- cleaning the nozzle by discharging the liquid crystal from the nozzle;
- disposing the liquid crystal material on the substrate by discharging the liquid crystal material from the nozzle (the liquid crystal materials first pass nozzle can use for cleaning purpose. Since the dirty and clean liquid crystal materials have been used for injecting in display cell, therefore, the cleaning purpose is not needed or is inherent).

wherein

- the liquid crystal used in the cleaning step is disposed on the substrate, and the quantity of the liquid crystal material disposed on the substrate in the step of cleaning and the quantity of the liquid crystal disposed on the substrate in the step of disposing constitute the specified quantity or amount (col. 2 lines 35-38).

Claim 2:

- the liquid material is warmed to room temperature or higher (col. 5 line 62 to col. 6 line 2).

Claim 4:

- a sealing material for adhering the first substrate to a second substrate is arranged on the first substrate, and a specified quantity of liquid crystal is arranged on the first substrate, away from the sealing material (Figs. 8-10).

Claim 5:

- after the first substrate and the second substrate are adhered to each other via said sealing material, the liquid crystal is spread over a whole space between the first substrate and the second substrate (Figs. 8-10, col. 8 lines 43-46).

However, Abe fails to disclose the cleaning nozzle and substrate with liquid crystal.

Mondin et al. teach the liquid crystal material being used to clean for the removing oily and greasy soil (liquid crystal composition has an evidenced grease release effect, contains an anionic detergent, an ethoxylated glycerol type compound, a hydrocarbon ingredient, and water).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a droplet discharge method for discharging a liquid material from a discharge device as Abe disclosed with the liquid crystal material being used to clean for the removing oily and greasy soil as taught by Mondin et al. (abstract).

Response to Arguments

Applicant's arguments filed on 12/07/2005 have been fully considered but they are not persuasive.

Applicant's ONLY arguments are follows:

- A. Abe does not teach, nor suggest a droplet discharge apparatus which disposes a liquid material in a specified quantity on a substrate (col. 2 lines 35-38), comprising a nozzle for discharging a liquid material in droplets; a liquid material supply system which supplies the liquid material to the nozzle; and a measuring device which measures a quantity of the liquid material disposed on the substrate, wherein a quantity of the liquid material disposed on the substrate is measured by the measuring device and the discharge of the liquid material from the nozzle is stopped when the quantity of the liquid material disposed on the substrate reaches a specified quantity.
- B. Neither Abe nor Mondin teaches nor suggests disposing the liquid material on a substrate in the cleaning step.

Examiner's responses to Applicants' ONLY arguments are follows:

- A. Abe does teach a droplet discharge apparatus which disposes a liquid material in a specified quantity or amount on a substrate, comprising a nozzle for discharging a liquid material in droplets; a liquid material supply system which supplies the liquid material to the nozzle; and a measuring device (controlling with step motor 31) which measures a quantity of the liquid material disposed on the substrate, wherein a quantity

of the liquid material disposed on the substrate is measured by the measuring device and the discharge of the liquid material from the nozzle is stopped with the step motor 31 when the quantity of the liquid material disposed on the substrate reaches a specified quantity.

B. Abe discloses the drops of the liquid crystal material passing the nozzle and disposing on the substrate.

However, the invention of the instant application discloses that the drops of the liquid crystal material passing the nozzle and disposing on the substrate. The dirty liquid crystal materials first pass the nozzle are also injecting on the substrate for the liquid crystal cell. Therefore, the liquid crystal materials passing the nozzle are also cleaning nozzle. If dirty liquid crystal materials are injected on the substrate and used for display device, the cleaning process is no needed or the cleaning process is inherent for liquid crystal material first passing the nozzle.

Therefore, Abe discloses the drops of the liquid crystal material passing the nozzle and disposing on the substrate. The liquid crystal materials first passing or passing the nozzle can be used for cleaning purposes at the same time.

The secondary reference Mondin et al. to show that liquid crystal may be used for any cleaning purpose. When applicant used cleaning process with the liquid crystal materials, this means the liquid crystal materials should clean the oils, dirt or soils inside the nozzle.

Therefore, liquid crystal materials can be used for cleaning purpose, and the nozzle keeps cleaning when the liquid crystal materials keep passing the nozzle and disposing on the substrate and stop passing when filling up.

Conclusion

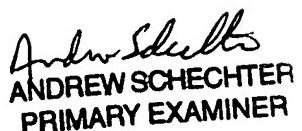
Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (571) 272-2296. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim H. Robert can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HOAN C. NGUYEN
Examiner
Art Unit 2871

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ANDREW SCHECHTER
PRIMARY EXAMINER